# Pacific Coast Protease Workshop

## Palm Canyon Resort Borrego Springs, California



**April 23 – 25, 2023** 

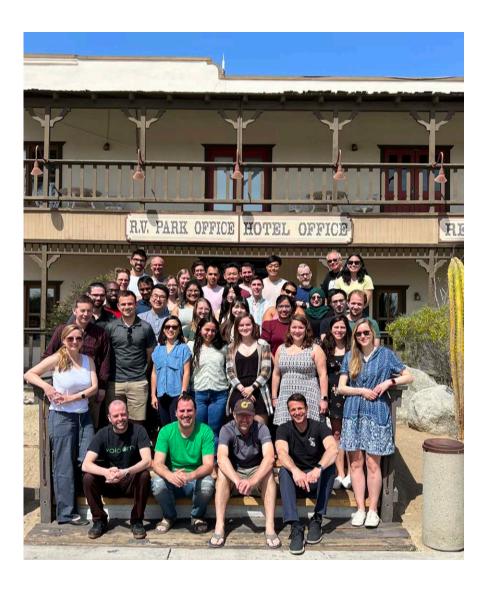
Organized by Matt Bogyo, Olivier Julien, Anthony O'Donoghue, Antoine Dufour and Scott Snipas

# ABOUT THE WORKSHOP

This workshop is designed to provide a stimulating expert environment for the discussion of new information on proteolytic enzymes, their substrates, their inhibitors, and their function.

The objective is to provide trainees (junior faculty, post-docs, and graduate students) with experience in presenting their work to an expert audience, chairing scientific sessions, and to foster collaborations. Expert external faculty will give guest presentations and stimulate discussions.

The work presented here is state-of-the-art and much is yet to be published. Consequently, professional use of the data and ideas learned at the workshop is prohibited without the expressed consent of the respective presenters and their supervisors.



There will be awards at the end of the workshop, including the coveted "Half Moon" for the best presentation.

#### **SPONSORS**

Pacific Coast Protease Spring School is pleased to recognize support by:



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# PRESENTATIONS AND ABSTRACTS

Trainee talks are 15 min (12 min + 3 min discussion). Guest faculty talks are 30 min (25 min + 5 min discussion). Speaker abstracts are listed in order of presentation.



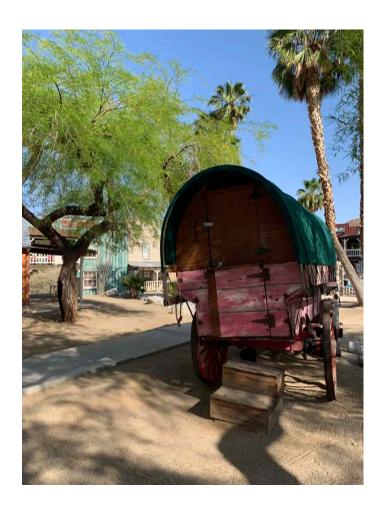
The Julien's Lab

### Sunday, April 23<sup>rd</sup>

3:00 pm	Matt, Anthony, OJ and Tony	Welcome!	Location: Upstairs Conference Room
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#### Chairs: Henry Wang and Franco Faucher

Time	Speaker	Title	Lab
0.00	Mathew Child	Fantastic beasts and how to kill them: Turning	Outside
3:20 pm	Matriew Critic	proteomic insights into molecular mechanisms	Expert
		A peptide conjugated biosensor for direct	
3:50 pm	Nikki Pedowitz	detection of active proteases in Borrelia	Bogyo
		spirochetes	
4:05 nm	Fernanda Dos Reis	Examining the specificity of different SARS-CoV-2	Salvesen
4:05 pm	Rocho	M <sup>pro</sup> variants	
		Proteolysis in the reproductive tract of women with	Dufour/
4:20 pm	Ana D'aubeterre	high-risk pregnancies: exploring the dysregulatory	
		potential of the microbiome	Sycuro
4:35 pm	Diego Trujillo	Proteasome Inhibitors as a Novel Drug-class for	O'Donoghue
4.55 pm		Treatment of Giardiasis	O Donognue
4:50 pm		15 min Discussion	
5:05 pm	Coffee break	Location: Conference Room	•



Chairs: Reinhild Kappelhoff and Regan Penner

Time	Speaker	Title	Lab
5:35 pm	Vinit Mahajan	Proteases in eye diseases	Outside Expert
6:05 pm	Peter Bell	No substrate left behind – data mining for evidence of proteolysis	Overall
6:20 pm	Leyna Duong	Expression and purification of enterovirus 2A split proteases	Bogyo
6:35 pm	Pavla Fajtova	Recombinant Expression and Structural Analysis of the 20S Proteasome from Trichomonas vaginalis	O'Donoghue
6:50 pm		15 min Discussion	
7:20 pm	Dinner Pizza	a at Carlee's 660 Palm Canyon Dr, Borrego Springs, CA	4 92004, US

The Bogyo's Lab





Monday, April 24<sup>th</sup>

Chairs: Ana D'aubeterre and Nikki Pedowitz

Time	Speaker	Title	Lab
8:30 am	Breakfast	Location: Big Horn Bar and Grill	
9:00 am	Paulina Kasperkiewicz	Measuring the proteases activity in a myeloid	Outside
9.00 am		lineage cell	Expert
9:30 am	Sonali Bhardwaj	Proteomic and metabolomic analysis of first trimester maternal serum associated with preterm birth	Dufour
9:45 am	Brianna Hurysz	Development of subunit specific Trichomonas vaginalis 20S proteasome substrates for drug design	O'Donoghue



Chairs: Pavla Fajtova and George Butler

Time	Speaker	Title	Lab
11:00 am	Kolden Van Barr	Hunting for inflammatory caspase substrates	Julien
11:15 pm	Hugo Ramos de Jesus	Substrate sequence specificity determination of	Overall
11.15 pm		the SARS-CoV-2 3CL protease by PICS	Overall
		Development of Oxadiazolone-based Probes	
11:30 am	Jeyun Jo	Targeting the Self-reciprocal Serine Hydrolase	Bogyo
		FphE in S. aureus	
12:00 pm	lunch	Location: Conference Room	
1:00 pm	Julian, CA	Gold Mine tour and Brewery dinner	
7:00 pm	Dinner	Location: Brewery dinner	

The Dufour lab stuck... as always!



Tuesday, April 25<sup>th</sup>

Chairs: Maly Cosco and Kolden Van Barr

Time	Speaker	Title	Lab
8:30 am	Breakfast	Location: Big Horn Bar and Grill	
9:00 am	Gigi Knudsen	Application of Protease Profiling Technology to Biological Discovery for Diagnostics	Outside Expert
9:30 am	John Bennett	Application of Mixed Alkyl/Aryl Phosphonates to Identify Essential Serine Hydrolases in Plasmodium falciparum	Bogyo
9:45 am	Regan Penner	Comparing the colonic tissue proteome of ulcerative colitis patients with active and inactive disease	Dufour
10:00 am	Kristyna Blazkova	Identification of Microbial Proteases that Modulate the Activity of the Protease-Activated Receptor 2	Bogyo
10:15 am		15 min Discussion	
10:30 am	Coffee break	Location: Conference Room	



Chairs: Maly Cosco and Kolden Van Barr

Time	Speaker	Title	Lab
11:00 am	Shiyu Chen	A substrate-based AND-gate probe for selective and sensitive NASH imaging	Bogyo
		Isolation and biochemical analysis of 20S	
11:15 am	Vandna Sharma	proteasome as a potential drug target for	O'Donoghue
		treatment of Candidiasis	
		In silico and biochemical screening	
11:30 pm	Nick Young	of TMPRSS2 inhibitors as an antiviral strategy	Craik
•	Ŭ	against SARS-CoV-2	
11:45 pm		15 min Discussion	
12:00 pm	Lunch	Location: Big Horn Bar and Grill	



Chairs: Peter Bell and Satarupa Bhaduri

Time	Speaker	Title	Lab
1:00 pm	Christian Cunningham	TBD	Outside Expert
1:30 pm	Henry Wang	Exploring Caspase Family Substrates Using N- terminomics and Database Assembly	Julien
1:45 pm	Tyler Detomasi	Proteases influence colony aggregation behavior in Vibrio cholerae	Craik
2:00 pm	Franco Faucher	Protease activated probes for real-time ratiometric imaging of solid tumors	Bogyo

2:00 pm	Satarupa Bhaduri	Proteolytic characterization of an intramembrane rhomboid protease Rhbdl4	O'Donoghue/ Neal
2:00 pm	Maly Cosco	Development of Selective Covalent Inhibitors for Fibroblast Activation Protein (FAP)	Bogyo
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	Garima Arvikar	Developing a targeted radiotherapy platform with	
2:45 pm	Gariffia Arvikar	a proteolytically activated membrane binding	Craik/Evans
		radiopharmaceutical	
3:00 pm		15 min Discussion	



Wednesday, April 26<sup>th</sup>

9:00 am	Departure
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#### **Emails**

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